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CITY OF DURHAM
Stormwater Services

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PROTECTING OUR WATERSHEDS - PROTECTING OUR WATER

A Fact Sheet About the Little Lick Creek Watershed Improvement Project

WHAT IS A WATERSHED?

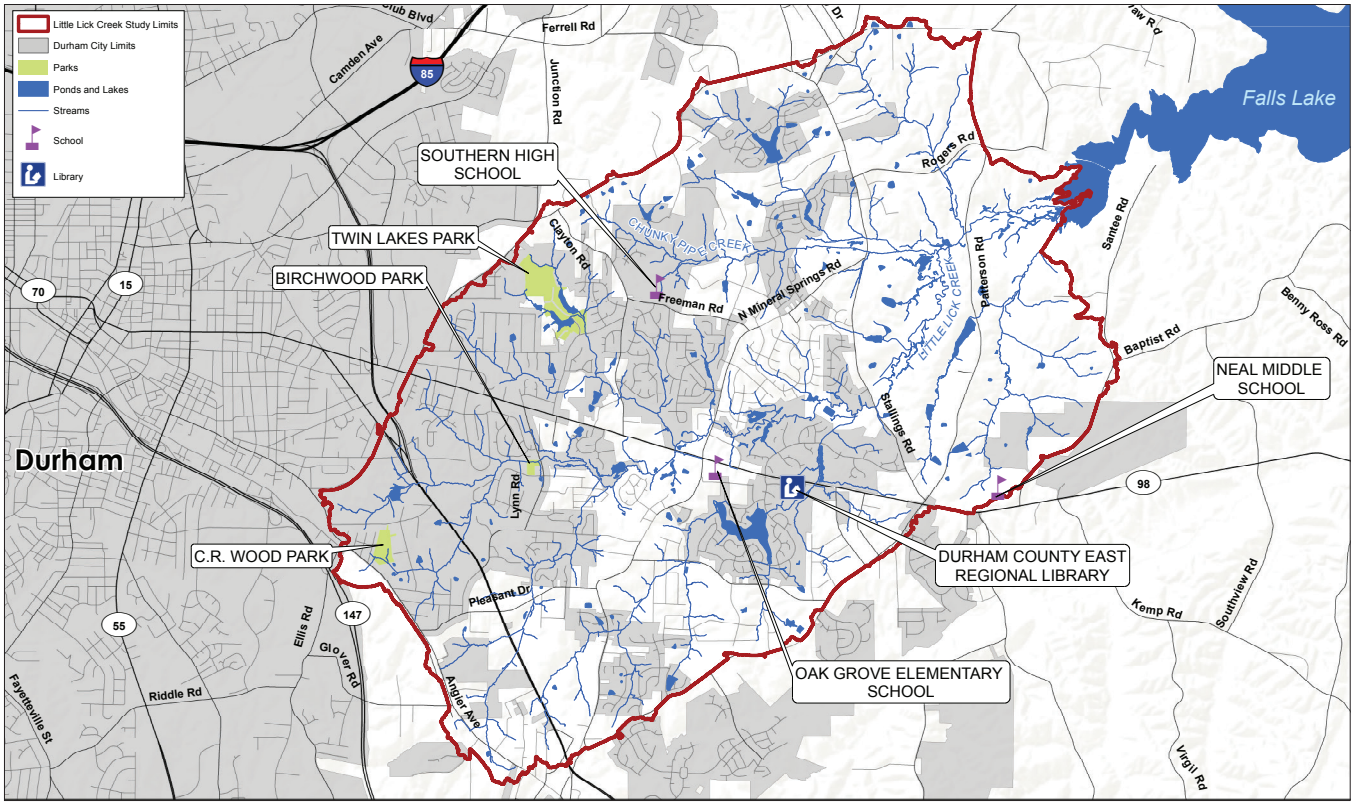
Everyone lives in a watershed. A watershed is all the land around a body of water, such as a stream, river or lake, that drains into it. When it rains, the water that doesn't soak into the ground runs downhill and becomes part of the nearest stream, river or lake. This runoff is referred to as stormwater.

THE LITTLE LICK CREEK WATERSHED IMPROVEMENT PROJECT

When rainfall gathers and flows over land, it picks up and carries pollution along with it. Understanding where the pollution comes from and what things we can do to prevent or reduce it is key to improving our water quality. By learning about the watershed's current condition and using that information to predict what could happen in the future, we can better understand how our activities affect local streams, rivers and lakes.

The Stormwater and GIS Services Division (within the City of Durham's Public Works Department) has started an assessment of the Little Lick Creek Watershed that will result in a Watershed Improvement Plan. The assessment is like a health check-up for a watershed and its streams, and will identify important watershed restoration projects that will improve water quality, improve the health of the Little Lick Creek watershed, and create value for communities in the watershed.

The City has completed Watershed Improvement Plans for Ellerbe Creek, Third Fork Creek, Northeast Creek, and Crooked Creek. This Watershed Improvement Project is part of the City of Durham's continued efforts to protect our regional water supply, improve the health of our creeks, and comply with water quality regulations. This watershed improvement plan will build upon a local watershed plan conducted in 2006.



WHY IS THE CITY CONDUCTING THIS ASSESSMENT?

The City is studying Little Lick Creek to determine the best ways to protect our regional water supply and meet water quality requirements set by the State of North Carolina. Little Lick Creek flows into Chunky Pipe Creek and then into Falls Lake, an important regional water supply reservoir. Since 2008, the State of North Carolina has designated the lower portion of Little Lick Creek near Falls Lake as an "impaired water." This means that this section of the creek is unable to support a healthy population of aquatic life and may not always be safe for fishing or swimming. Falls Lake has also been designated as an impaired water due to degraded water quality in recent years. The Watershed Improvement Plan for Little Lick Creek will help the City identify the projects that are most likely to improve water quality in Little Lick Creek and Falls Lake.

WHAT ARE THE FIRST STEPS IN THE WATERSHED ASSESSMENT?

The project began with an assessment of the current condition of the watershed. This involved completing stream walks to understand the health of the creek, assessing existing and potential stormwater control measures (SCMs), and reviewing data on watershed health collected by the state, the City, or other organizations.

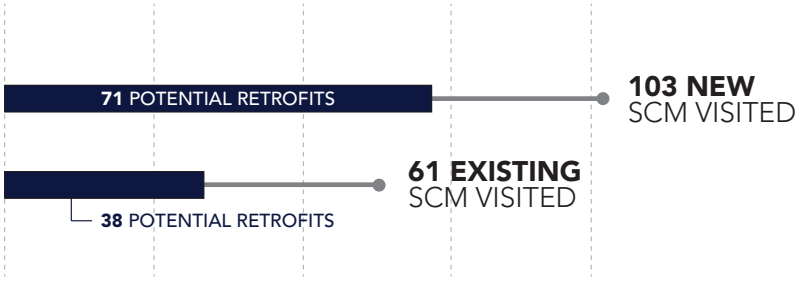
STORMWATER CONTROL MEASURE
(or SCM) is a general term that describes both devices and activities that control the quantity and quality of the stormwater that flows off our land and into our streams.

During the stream walks, field crews, made up of scientists and engineers, recorded information on the condition of creeks and water quality along Little Lick Creek, Chunky Pipe Creek, and the streams that flow into them (known as tributaries). They made observations on the overall health of each creek, recorded the location of observed water quality problems, noted locations where illegal dumping is occurring, and identified potential restoration efforts. Stream restoration efforts can include stabilizing stream banks to reduce erosion or replanting shrubs and trees along creeks where the vegetation has been removed.

Next, field crews examined the SCMs throughout the Little Lick Creek watershed. Their examination assessed the performance of each SCM at controlling the volume and quality of stormwater and identified ways to improve their performance. Finally, the field crews identified areas where new SCMs could be installed to treat polluted stormwater from developed areas that lack stormwater controls.

HOW CAN STORMWATER CONTROL MEASURES IMPROVE WATER QUALITY?

Our scientists and engineers visited 61 existing SCMs to examine their performance and to identify modifications that can improve their water quality benefits. Our field crews recommended modifications to 38 of the existing SCMs to improve water quality treatment.



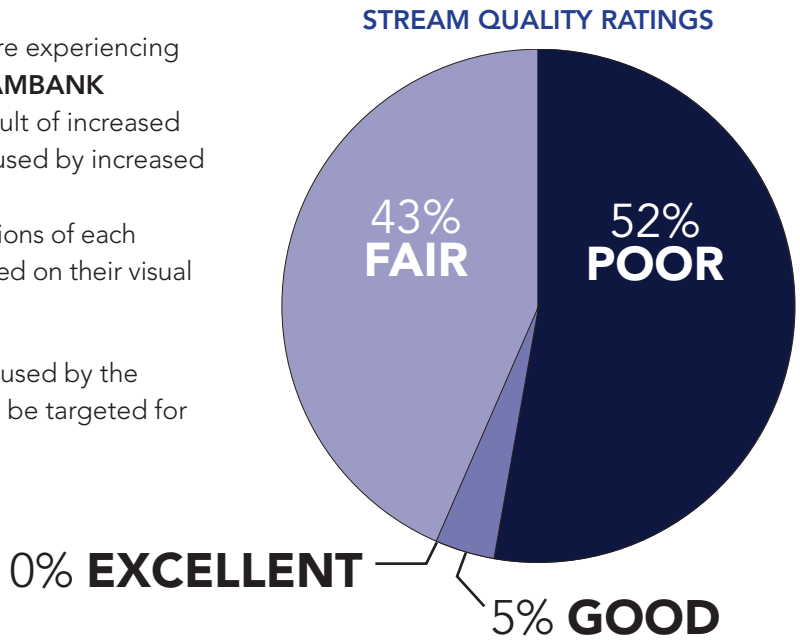
Our field crews also identified 103 sites where a new SCM could be installed to treat polluted runoff from developed areas that have no existing SCMs. The water quality benefits of each SCM will be estimated in the next phase of the study to help determine which provide the most cost-effective water quality benefits.

WHAT DID THEY FIND ON THEIR STREAM WALKS?

Engineers and scientists **WALKED APPROXIMATELY 26 MILES** of Little Lick Creek, Chunky Pipe Creek, and their tributaries. **A TOTAL OF 104 STREAM REACHES** were assessed as part of this project. The field crews noted the following:

- The majority of these creeks are experiencing **MODERATE TO HIGH STREAMBANK EROSION**, which is likely a result of increased stormwater runoff volumes caused by increased urban development
- The overall health of most sections of each creek is "**POOR TO FAIR**" based on their visual assessment

The results of the stream-walks will be used by the City to prioritize which sections should be targeted for restoration measures.



WHAT ARE THE NEXT STEPS?

The Little Lick Creek Watershed Improvement Project includes field work that is scheduled to be completed in the spring and summer of 2014. All of the data collected in the field will ensure that the City uses the most accurate information to study the solutions that best address the needs of both the residents and the watershed.

After the field work is completed, City staff and engineering consultants will identify specific opportunities to protect and improve water quality. Each of these opportunities will be evaluated using computer models of the watershed to determine how much it can help protect and improve water quality. Each opportunity will then be prioritized by asking the following questions:

1. How much does the project improve water quality compared to its construction and maintenance costs?
2. Does the project improve the ability of each creek to support fish and other aquatic life?
3. How effectively will the project reduce the amount of sediment entering the creek due to erosion of the stream banks?
4. Will the project be welcomed by the local residents and the community?
5. Will any issues occur during implementation, such as difficulty in obtaining the necessary permits?
6. Will the project help reduce or prevent localized street flooding or damage to property during large storm events?

Working with residents of the watershed, the project staff will develop a draft Watershed Improvement Plan. The draft plan will be discussed in a public information session planned for Winter 2015. Public input will be used to ensure that the final plan addresses the needs of the watershed and the concerns of residents.

PROJECT SCHEDULE

Key milestones of the project schedule are listed below. There are three public information sessions for our project team to share information with and collect feedback from residents and interested community members.

ACTIVITIES	DATES
SCM and Stream Assessment Field Work	April - July 2014
PUBLIC INFORMATION SESSION NO. 1	**May 29, 2014**
Pilot Study Area Evaluations	June - July 2014
Watershed Model Development	June – October 2014
Riparian Area Management Plan	August – September 2014
Critical Area Protection Plan	September – October 2014
Watershed Improvement Evaluations	October – December 2014
PUBLIC INFORMATION SESSION NO. 2	**Winter 2015**
Draft Watershed Improvement Plan	Winter 2015
PUBLIC INFORMATION SESSION NO. 3	**Spring 2015**
Final Watershed Improvement Plan	Spring 2015

ABOUT THE LITTLE LICK CREEK WATERSHED

- The Little Lick Creek watershed includes areas of eastern Durham between U.S. Highway 70 and Falls Lake. Water from Little Lick Creek flows into Falls Lake. Water then flows into the Neuse River and into the Albemarle-Pamlico Sound before emptying into the ocean.
- Some of the major neighborhoods in the watershed are Grove Park, Hidden Hollow, Stonehill, and Twin Lakes. Other landmarks in the watershed are the Durham County East Regional Library, Oak Grove Elementary School, Neal Middle School, Southern High School, Twin Lakes Park, Birchwood Park, and C.R. Wood Park

Residents along Little Lick Creek probably noticed field crews in their neighborhood and conducting stream walks.

Information on the Watershed Improvements Program can be found on the Stormwater Services website: http://bit.ly/littlelick. You can also join the discussion on Facebook (www.facebook.com/durhamncstormwater) and Twitter (@durhamstormH20)! For additional information, please contact the City Project Manager, **Sandi Wilbur** at **Sandra.Wilbur@durhamnc.gov** / **(919) 560-4326 ext.30286,** or **Lance Fontaine** at **Lance.Fontaine@durhamnc.gov** / **(919) 560-4326 ext.30257.**

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